

CENTRAL INTELLIGENCE AGENCY 15127-66

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COUNTRY: UNIDENTIFIED 4 MAY 1966
 SUBJECT: Exploitation of Metallic Fragment from Unidentified Flying Object
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On file in CIA Library is an exploitation report on a metallic fragment approximately 2"x2"x1", recovered near Kerekene, Republic of the Congo. The fragment was recovered by ground search after a UFO fell to earth in the area. The report concludes that the fragment was originally part of an electrical component and was constructed of 0.010-inch thick silicon-steel laminate.

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EXPLOSION REPORT

FRAGMENT, METAL, RECOVERED IN THE REPUBLIC OF THE CONGO,
BELIEVED TO BE AN UNIDENTIFIED FLYING OBJECT
(COUNTRY UNIDENTIFIED) (U)
MCN-25500

SECTION I. (C) Purpose (U)

1. (C) The purpose of this report is to present the results of the exploitation of a metallic fragment recovered near the town of Kerehona in the Republic of the Congo. The recovery was the result of a ground-level search which was conducted after an unidentified flying object exploded and fell to earth in the area. The sighting and recovery took place sometime between 10 and 15 October 1945. Other than a reported east-to-west direction of flight for the UFO, specific observation and recovery details are lacking.

SECTION II. (C) Description (U)

2. (C) Details concerning the exact location and characteristics of impact are unknown. However, the appearance of the fragment indicated exposure to high temperatures prior to impact. The surface of the specimen had little effect on its final condition or appearance. The fragment weighed 4.41g and an immediate density of approximately iron and measured 2.25 x 1.75 x 1.0 inches. The top and side views of the specimen were rounded and appeared to have been shaped by heating and melting. This is illustrated in Figures 1 and 2. The V-shaped groove, visible in Figure 1, is the outline of an insert of steel that differs slightly from the rest of the specimen. Figure 3 shows the side view of the end shown in Figure 1.

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and was composed of six machined or formed shaped fins extending along the major axis of the fragment.

SECTION III. (C) Conclusion

3. (C) The fragment was originally part of an electric component and could be identified as a motor stator, generator armature, or associated electrical regulator or device.

4. (C) The fragment was constructed of .10-inch thick silicon steel laminates stacked on a central mild steel core or shaft.

5. (C) Materials, processes, dimensions, etc., as such, prevent determination of exact origin (country).

6. (C) Surface appearance and microstructure of the specimen indicates exposure to temperatures in excess of 2800° F.

SECTION IV. (C) Exploitation

7. (C) The recovered specimen was a mild steel core and has a country closely approximating that of the United States. The metal on heavy oxide was found to have been exposed to temperatures in excess of 2800° F. While there are no indications of impact, the flawed metal, as shown in Figures 4 and 7, would substantiate the conclusion that the item was moving at a high velocity when it was hot.

8. (C) Fabrication of the item was accomplished utilizing more or less standard procedures for fabricating electric motor armatures. Armature laminates were stamped (punched) from approximately .012-inch sheet steel, copper-plated, and assembled on a mild steel shaft approximately .403 inches in diameter. Following assembly, the laminates were joined by solid-state or diffusion-bonding of the copper-

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plating. This can be accomplished by slightly compacting the laminate assembly and heating in a furnace. Temperature required for bonding of the copper depends upon the degree of compaction or pressure; the higher pressures requiring proportionately lower temperatures.

9. (C) A cross-section (transverse to length of the specimen) is shown in Figure 5. The light-colored areas are the edges of individual laminates, caused by cutting at an angle to, instead of parallel to, the laminates. The dark areas are fins or petals are "T" shaped. This shape is used to help winding wire in place and is found on high RPM motors. The melted condition of some of the "T's" is indicative of the high heating conditions experienced. The outer surface of the armature shaft is serrated to prevent axial slippage of the laminates.

10. (C) The lamination or sticking of individual laminates is clearly illustrated in Figure 6. The gap between laminates on the fin at the top of the photograph is due to the melting and flowing of the copper plating during the high temperature exposure of the specimen. Some of the copper has been removed from the fin at the bottom of the photograph. A representative cross-section of this area is shown in Figures 7 and 8.

11. (C) Another result of intense heating was the enlarged grain size of the steel laminates' microstructure. The microstructure of the laminates shown in Figures 9 and 10 illustrates grain sizes that are comparable to Company 2 of ASTM Grain Size Standards. The large grain size indicates that the steel was heated to a high temperature during the process.

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intense heat and then cooled at a comparatively slow rate.

12. (C) The light material between the laminations in Figure 9 is plated copper that melted and flowed between the laminations when the entire specimen was hot. A photomicrograph of this is shown in Figure 11.

13. (C) Analysis of the cast discloses the following:

Element	Percent	(Calculated)
Carbon		
Manganese		
Silicon		
Nickel		less than 0.10
Chromium		0.87
Molybdenum		less than 0.01

14. (C) Chemical composition of the steel laminations was as follows:

Element	Percent Present (Calculated)
Manganese	0.25
Silicon	(0.15)
Nickel	less than 0.10
Chromium	
Molybdenum	less than 0.01

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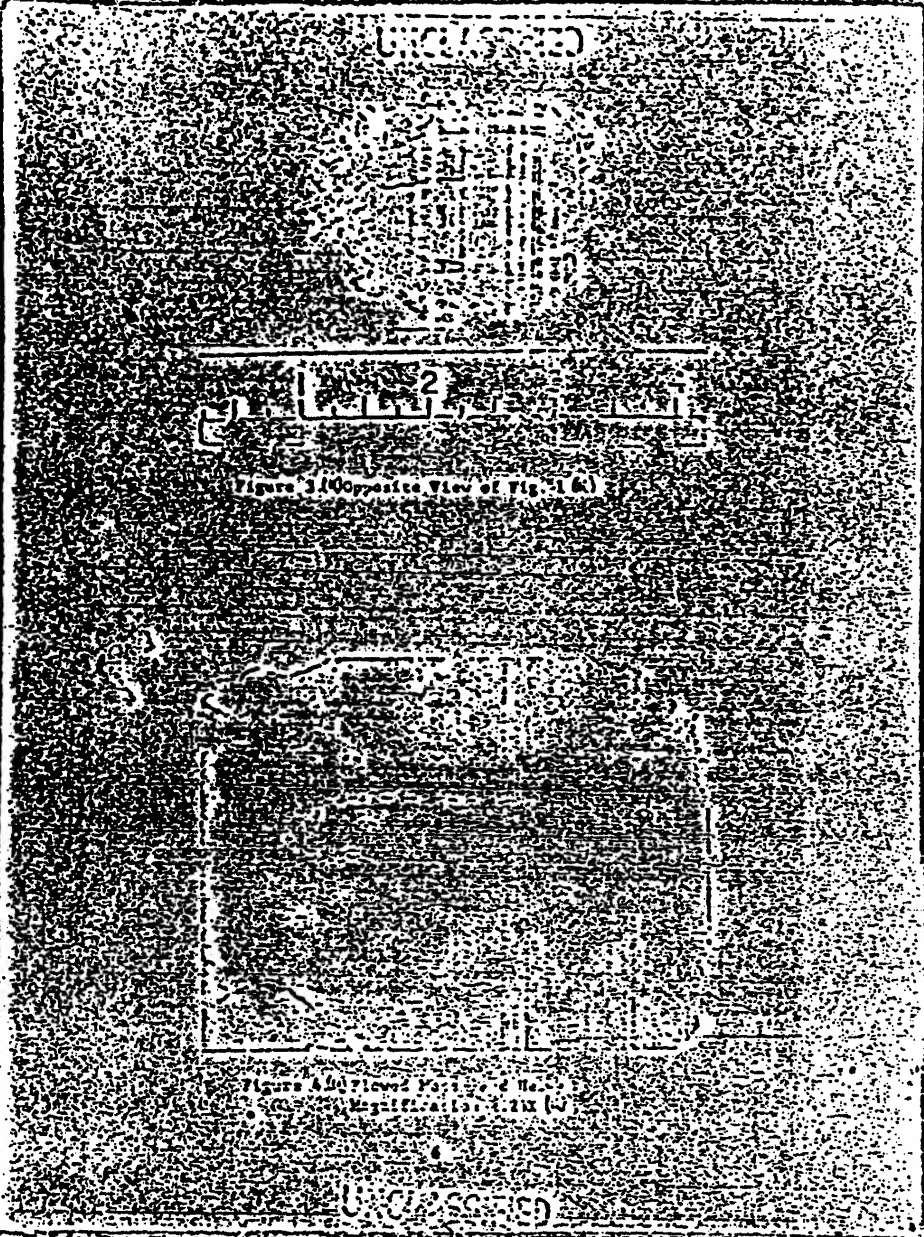


Figure 1 Opposite View of Fig. 1 (a)

Figure 2 Opposite View of Fig. 2 (a)

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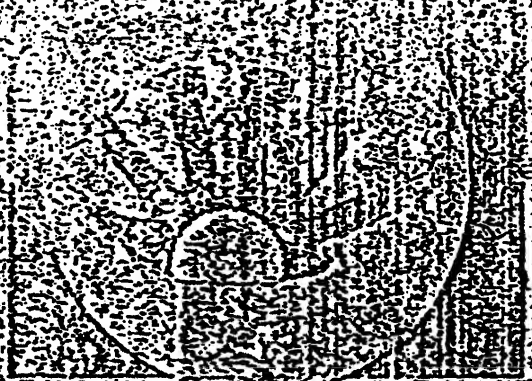
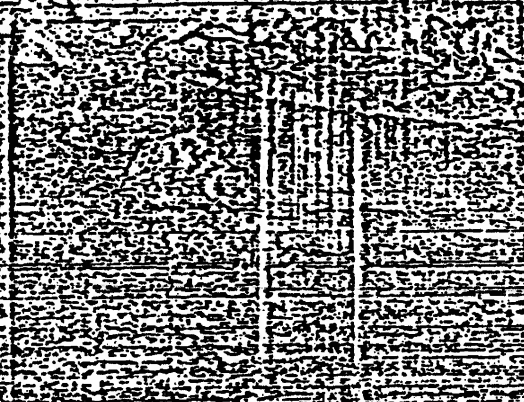


Figure 1. [Illegible text]
March 21, 1964
Kangaroo Island, SA



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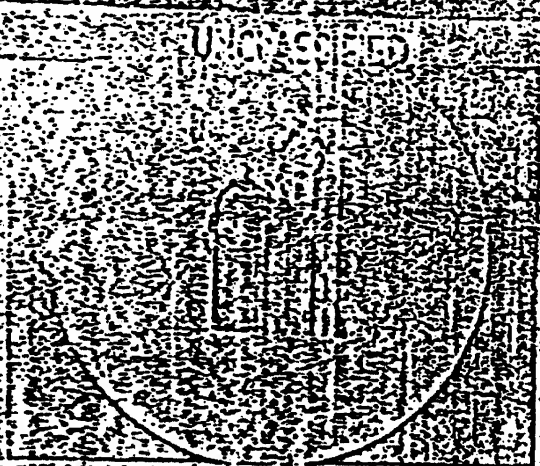


Figure 7. Micrograph Cross-section of
Laminated Iron
Magnification: 75X 60

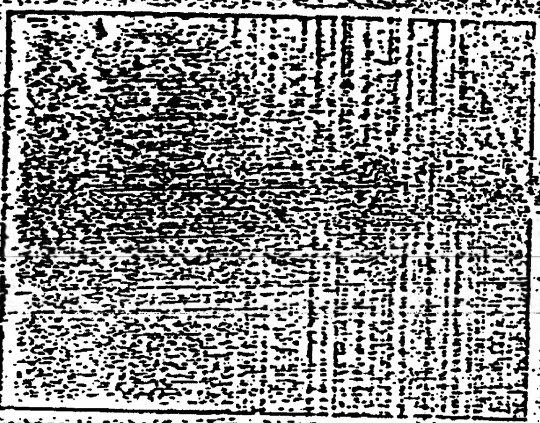


Figure 8. Micrograph Cross-section of
Laminated Iron
Magnification: 100X 60

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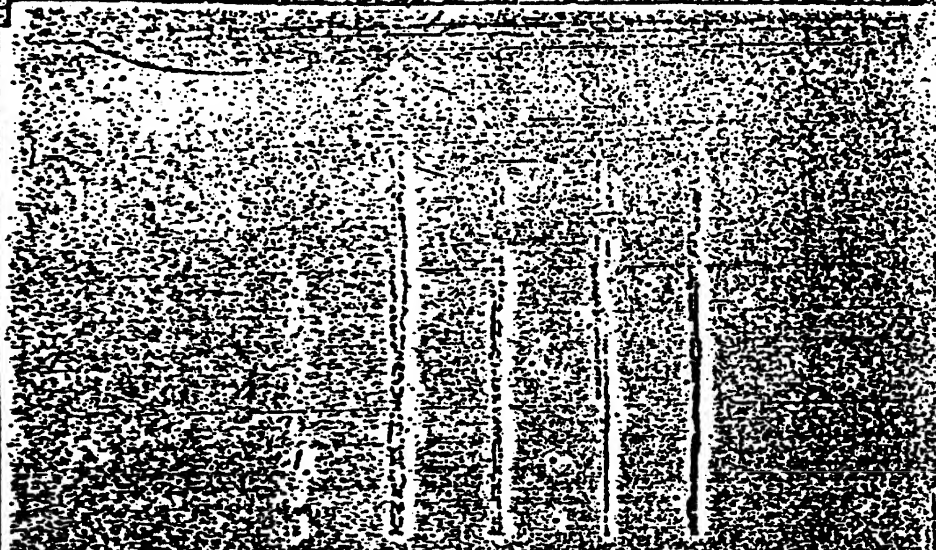


Figure 9 (a) Mirror Picture
of the
Regulation of
(C. Nical Etch)

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